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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/728,845

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Yoko Mitarai

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9235

513 7590 02/05/2007
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EXAMINER

MCNELIS, KATHLEEN A

ART UNIT

PAPER NUMBER

1742

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/05/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/728,845

Applicant(s)

MITARAI ET AL.

Examiner

Kathleen A. McNelis

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-16 is/are pending in the application.
- 4a) Of the above claim(s) 11-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9, 10, 15 and 16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Claims Status

Claims 9-16 remain for examination wherein claims 11-14 are withdrawn and claims 15 and 16 are new.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Status of Previous Rejections

The previous rejection of Claim 9 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Gu et al. 1998 is withdrawn in view of amendments to the claims.

The previous rejection of claim 9 under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Gu et al. 1999 is withdrawn in view of certified translation of Japanese priority document. Gu et al. 1999 is no longer available as prior art.

The previous rejection of claim 10 under 35 U.S.C. 103(a) as obvious over Gu et al. 1999 or Gu et al. 1998 in view of Duhl et al. (U.S. Pat. No. 4,719,080) or Bradley, 1988 is withdrawn for reasons cited above regarding Gu et al. 1999 or Gu et al. 1998 documents.

The previous rejection of claims 9 and 10 under 35 U.S.C. 103(a) as being unpatentable over Koizumi et al. (U.S. Pat. No. 6,071,470) is maintained.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 9, 10, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koizumi et al. (U.S. Pat. No. 6,071,470).

Koizumi et al. is applied as set forth in the 05/09/2006 Office action.

With respect to the amendments to claims 9 and 10, Koizumi et al. discloses niobium, tantalum or aluminum alloyed with iridium or rhodium to form a L1₂ crystalline structure as discussed on p. 6 of the 05/09/2006 Office action. Further, since Koizumi et al. teaches equal utility for Ir or Rh in the alloy compositions, it would have been obvious to one of ordinary skill in the art to use mixtures of rhodium and iridium.

With respect to claim 15, Koizumi et al. discloses that the range for additive element (corresponding to (B) in present invention) is from 5 to 20 atomic %. Koizumi et al. teaches that nickel may be partially substituted for Rh to reduce the specific gravity and cost of the superalloy (col. 2 lines 49-52). In examples, Koizumi et al. discloses alloys with 15% additive; balance Rh (col. 4 lines 1-20). The range of partial nickel substitution would therefore be limited to: from 0% to less than 85% (amount of Rh present), whereas the Rh content would range from 95 (at 5% additive, no Ni) to 0% (Ni fully substituted for Rh). Values can be selected from these ranges which are within the claimed range of (A) to (B) of from 0.25:1 to 12:1, where (A) corresponds to Ni and B corresponds to Nb or Ta in Koizumi et al., therefore a prima facie case of obviousness exists (M.P.E.P § 2144.05).

With respect to claim 16, Koizumi et al. discloses from 2 to 22 atomic % of an additive element, where the additive element is Nb or Ta (corresponding to claim 16 (B)) or aluminum (corresponding to claim 16 (D)) (col. 2 lines 1-9). The range of 2 to 22 atomic % is within the claimed range of less than or equal 25 atomic %. The balance of the alloy is Rh or a mixture of Rh and Ir (corresponding to claim 16 (C)) alone or partially substituted with Ni (corresponding to

claim 16 (A)) as discussed above regarding claims 9 and 10. The total sum of Rh, Ir and Ni is therefore at least 78 atomic % (i.e. 100 % - 22%), which is within the claimed range of at least 75%.

Response to Arguments

Applicant's arguments filed 11/09/2006 regarding rejection of claims 9 and 10 under 35 U.S.C. 103 as unpatentable over Koizumi have been fully considered but they are not persuasive.

Arguments are summarized as follows:

1. The present invention discloses a two phase structure in which a $L1_2$ phase is precipitated into a matrix of a fcc phase whereas Koizumi et al. does not disclose this microstructure.
2. Koizumi et al. does not disclose that the $L1_2$ type structure is 20 to 80% by volume, since not all alloys having the claimed composition will have a two-phase structure.

Examiner's responses are as follows:

1. Koizumi et al. discloses an alloy of two crystalline phases, one of which is an FCC structure and the other an $L1_2$ type structure (col. 2 lines 1-9), therefore Koizumi et al. discloses the same microstructure.
2. A two-phase microstructure is disclosed as discussed above regarding response to argument 1, therefore Koizumi et al. teaches the claimed microstructure except for the range of the $L1_2$ type structure is 20 to 80% by volume. This issue is addressed on p. 5 of the 05/09/2006 Office action. Further, examiner does not find evidence supporting the criticality of this range (e.g. comparative test results).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kathleen A. McNelis whose telephone number is 571 272 3554. The examiner can normally be reached on M-F 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR

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system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KAM

01/29/2007

Km

[Handwritten signature]
ROY KING
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1742